

REMARKS/ARGUMENTS

Claims 13-16 and 19-29 are pending. By this Amendment, claims 17 and 18 are cancelled, and claims 13, 19 and 29 are amended. Support for the amendments to claims 13, 19 and 29 can be found, for example, in the present specification at page 29, lines 1 to 7, and in original claims 13, 19 and 29. No new matter is added. In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

Rejection Under 35 U.S.C. §112, Second Paragraph

The Office Action rejects claims 29 as indefinite under 35 U.S.C. §112, second paragraph. By this Amendment, claims 29 is amended to recite proper Markush language, rendering the rejection moot. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Gislason and Ino

The Office Action rejects claims 13-18 and 20-29 under 35 U.S.C. §103(a) over U.S. Patent No. 6,914,033 to Gislason et al. ("Gislason") in view of U.S. Patent No. 5,268,346 to Ino et al. ("Ino"). By this Amendment, claims 17 to 18 are cancelled, rendering the rejection moot as to those claims. As to the remaining claims, Applicants respectfully traverse the rejection.

Claim 13 recites "[a] process for producing hydrogen, comprising: desulfurizing a hydrocarbon fuel by contacting the hydrocarbon fuel to an adsorbent comprising cerium oxide, primary particles of the cerium oxide having a mean crystallite size of 10 nm or less; and subsequently bringing the desulfurized fuel into contact with a catalyst comprising at least one member selected from the group consisting of a partial-oxidation reforming catalyst,

an autothermal reforming catalyst, and a steam reforming catalyst; wherein desulfurizing the hydrocarbon fuel comprises desulfurizing at room temperature" (emphasis added). Gislason and Ino do not disclose or suggest such a process.

Gislason discloses that desulfurization is carried out at a temperature of from about 100 °F to about 1,000 °F. *See* Gislason, column 13, lines 3 to 10. As discussed in the previous response, Ino does not disclose a desulfurization process at all, much less that desulfurization is carried out at room temperature. Rather, in Ino, a hydrocarbon stream that has already been subjected to desulfurization is subjected to a reforming reaction employing a reforming catalyst including ruthenium and, e.g., ceria. *See, e.g.,* Ino, column 2, lines 14 to 23, column 4, lines 36 to 40.

As neither Gislason nor Ino discloses or suggests desulfurizing at room temperature, the combination of references fails to disclose or suggest each and every feature of claim 13.

Claim 13 would not have been rendered obvious by Gislason and Ino. Claims 14-16 and 20-29 depend from claim 13 and, thus, also would not have been rendered obvious by Gislason and Ino. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

#### Ino and Gislason

The Office Action rejects claims 13-18 under 35 U.S.C. §103(a) over Ino in view of Gislason. By this Amendment, claims 17 to 18 are cancelled, rendering the rejection moot as to those claims. As to the remaining claims, Applicants respectfully traverse the rejection.

Claim 13 is set forth above. For the reasons discussed above, Ino and Gislason fail to disclose or suggest each and every feature of claim 13.

Claim 13 would not have been rendered obvious by Ino and Gislason. Claims 14-16 and 20-29 depend from claim 13 and, thus, also would not have been rendered obvious by Ino

and Gislason. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Gislason, Ino and Shore

The Office Action rejects claim 19 under 35 U.S.C. §103(a) over Gislason in view of Ino and U.S. Patent No. 6,541,419 to Shore et al. ("Shore"). Applicants respectfully traverse the rejection.

Claim 19 recites "[a] fuel cell system, comprising: a desulfurizer; and a reforming apparatus; wherein: the desulfurizer comprises an adsorbent comprising cerium oxide having primary particles with a mean crystallite size of 10 nm or less, the desulfurizer being configured so that a hydrocarbon fuel can be contacted to the adsorbent; and the reforming apparatus comprises a catalyst comprising at least one member selected from the group consisting of a partial-oxidation reforming catalyst, an autothermal reforming catalyst, and a steam reforming catalyst, the reforming apparatus being configured so that a desulfurized fuel can be contacted to the catalyst; wherein the desulfurizer is configured to desulfurize the hydrocarbon fuel at room temperature" (emphasis added). Shore fails to disclose or suggest such a system.

The Office Action asserts that Shore discloses a fuel cell system. *See* Office Action, page 2. The Office Action further asserts that it would have been obvious to employ the system of Gislason or Ino in the fuel cell system of Shore. *See* Office Action, page 2. For the reasons discussed above, neither Gislason nor Ino discloses a system configured to perform desulfurization at room temperature. Accordingly, even if the references were combined as proposed in the Office Action, a fuel cell as recited in claim 19 would not be obtained.

As Gislason, Ino and Shore fail to disclose or suggest a fuel cell system including a desulfurizer configured to desulfurize a hydrocarbon fuel at room temperature, the combination of references fails to disclose or suggest each and every feature of claim 19.

Claim 19 is would not have been rendered obvious by Gislason, Ino and Shore. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Ino, Gislason and Shore

The Office Action rejects claim 19 under 35 U.S.C. §103(a) over Gislason in view of Ino and U.S. Patent No. 6,541,419 to Shore et al. ("Shore"). Applicants respectfully traverse the rejection.

Claim 19 is set forth above. For the reasons discussed above, Ino, Gislason and Shore fail to disclose or suggest each and every feature of claim 13.

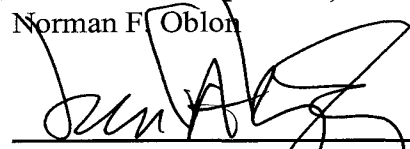
Claim 19 would not have been rendered obvious by Ino, Gislason and Shore. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

For the foregoing reasons, Applicants submit that claims 13-16 and 19-29 are in condition for allowance. Prompt reconsideration and allowance are respectfully requested.

Respectfully submitted,

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